

WHAT IS CLAIMED IS:

1. A fuel cell system comprising:
 - a fuel cell;
 - a circulating pump;
 - 5 an ion exchange resin filter;
 - an electric conductivity meter;
 - a circulating flow path including the fuel cell, the circulating pump, the ion exchange resin filter and the electric conductivity meter; and
 - a judgment part judging whether replacement of the ion exchange resin filter is
 - 10 needed on the basis of the result of comparison between a predetermined reference electric conductivity and the electric conductivity of water circulating in the circulating flow path as measured by the electric conductivity meter a predetermined time after a start of water circulation.
- 15 2. The fuel cell system according to claim 1 wherein the circulating flow path is a flow path through which coolant water is circulated to cool the fuel cell.
3. The fuel cell system according to claim 1 wherein the circulation in flow path is a flow path through which pure water is circulated to humidify a fuel gas and an oxidizing agent
- 20 which are supplied to the fuel cell.
4. The fuel cell system according to any one of claims 1 wherein the predetermined time is set on the basis of the initial electric conductivity of water circulating in the circulating flow path.
- 25 5. The fuel cell system according to claim 1 wherein the predetermined time is set shorter than a period in which the electric conductivity of water circulating in the circulating flow path reaches a steady-state value.
- 30 6. The fuel cell system according to claim 4 wherein the predetermined time is set to be

shorter, when the initial electric conductivity is smaller.

7. The fuel cell system according to any one of claims 1 wherein the predetermined reference electric conductivity is an electric conductivity estimated as being measured in a case where the ion-exchange efficiency has a normal ion-exchange capacity.

8. The fuel cell system according to any one of claims 1 wherein the predetermined time is set to a period in which the water circulating in the circulating flow path circulates through the circulating flow path for a predetermined number of times.

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9. A method of controlling a circulating flow path of a fuel cell system having a fuel cell, a circulating water pump, an ion exchange resin filter and an electric conductivity meter in the circulating flow path, comprising

judging whether the ion exchange resin filter needs replacement on the basis of the result of comparison between a predetermined reference and the electric conductivity of water circulating in the circulating flow path as measured by the electric conductivity meter a predetermined time after a start of water circulation.

10. A fuel cell system comprising:

a circulating means of water in a fuel cells;
an ion-exchange means of the circulating water,
the circulating flow path including an electric conductivity measuring means, the fuel cell, the circulating means, the ion-exchange means and the electric conductivity measuring means; and

a judging means judging whether the ion exchange resin filter needs replacement on the basis of the result of comparison between a predetermined reference and the electric conductivity of water circulating in the circulating flow path as measured by the electric conductivity means a predetermined time after a start of water circulation.